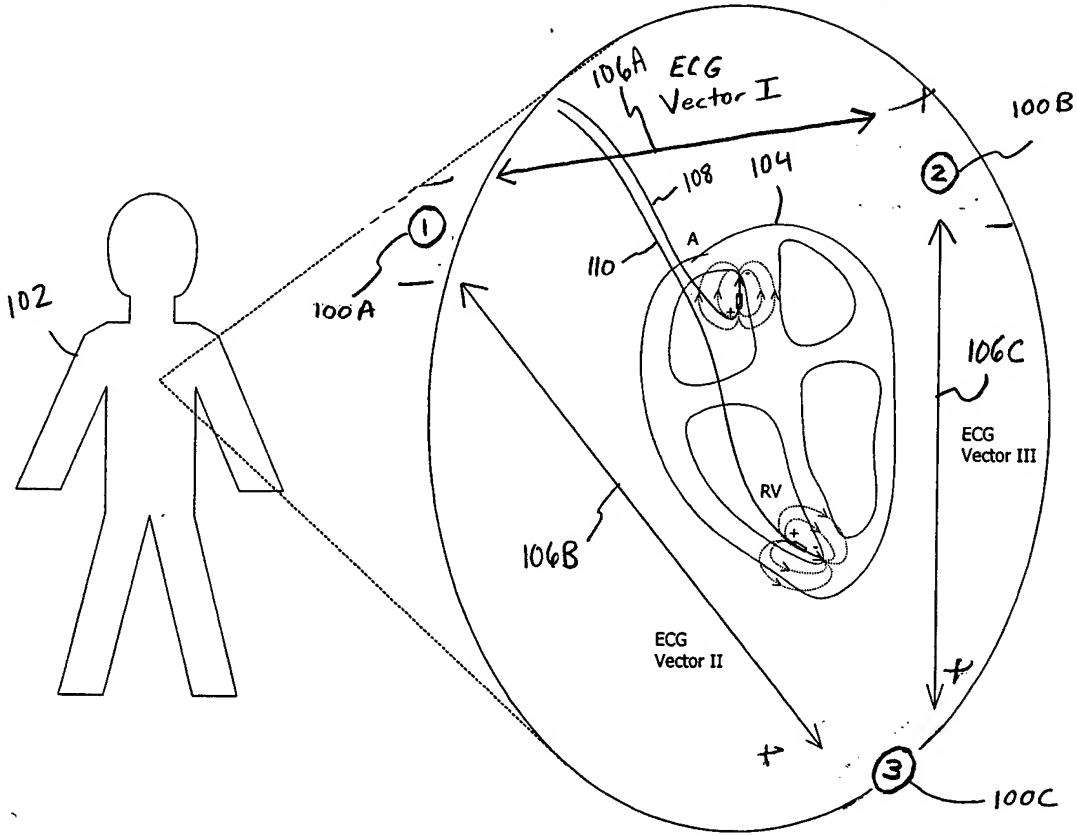
106A
ECG
Vector I
100B
2
108
104
1
110
A
100A
102
106C
ECG
Vector III
RV
106B
ECG
Vector II
3
100C

FIG. 1

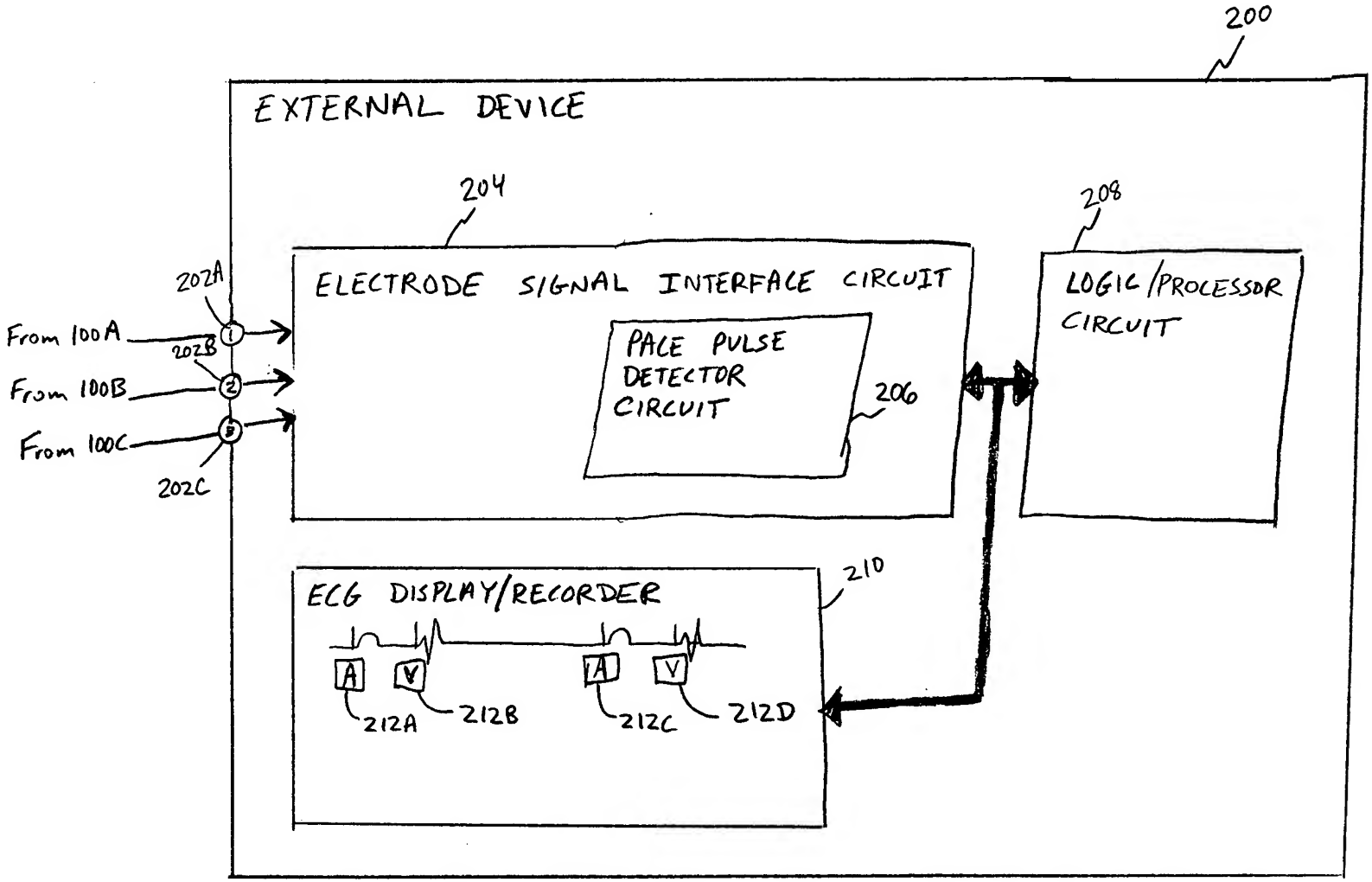
200
EXTERNAL DEVICE
204
ELECTRODE SIGNAL INTERFACE CIRCUIT
PACE PULSE DETECTOR CIRCUIT
206
208
LOGIC/PROCESSOR CIRCUIT
202A
202B
202C
From 100A
From 100B
From 100C
1
2
3
ECG DISPLAY/RECORDER
210
A
V
A
V
212A
212B
212C
212D

FIG. 2

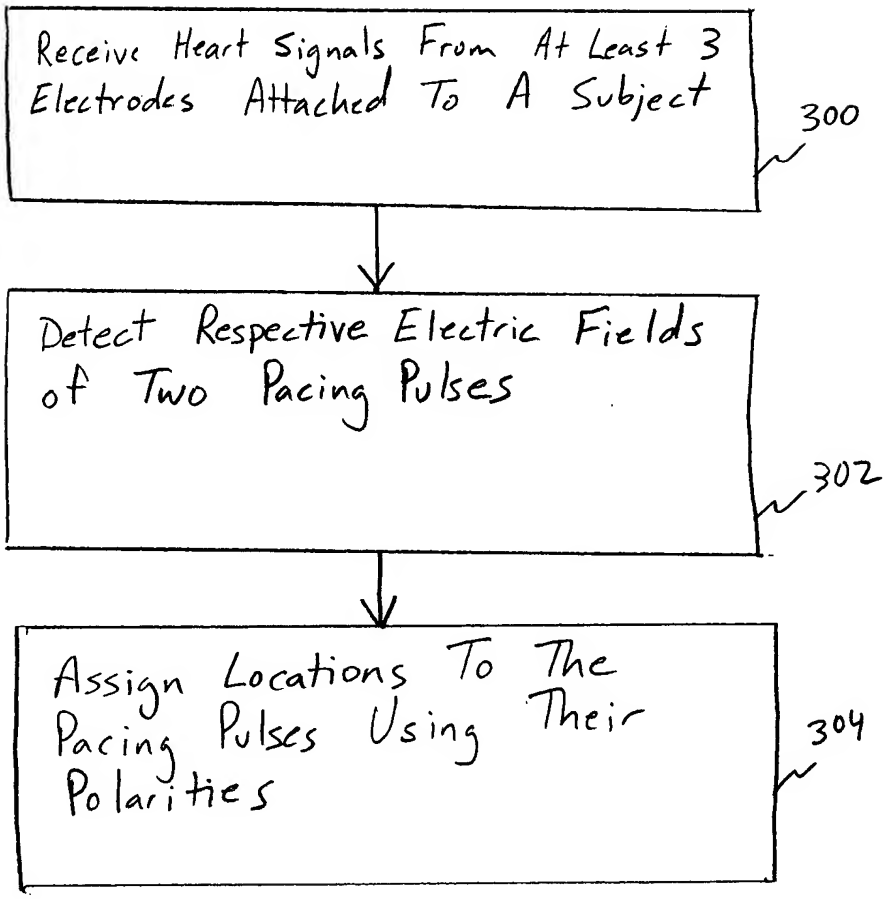
Receive Heart Signals From At Least 3 Electrodes Attached To A Subject
300
Detect Respective Electric Fields of Two Pacing Pulses
302
Assign Locations To The Pacing Pulses Using Their Polarities
304

FIG. 3

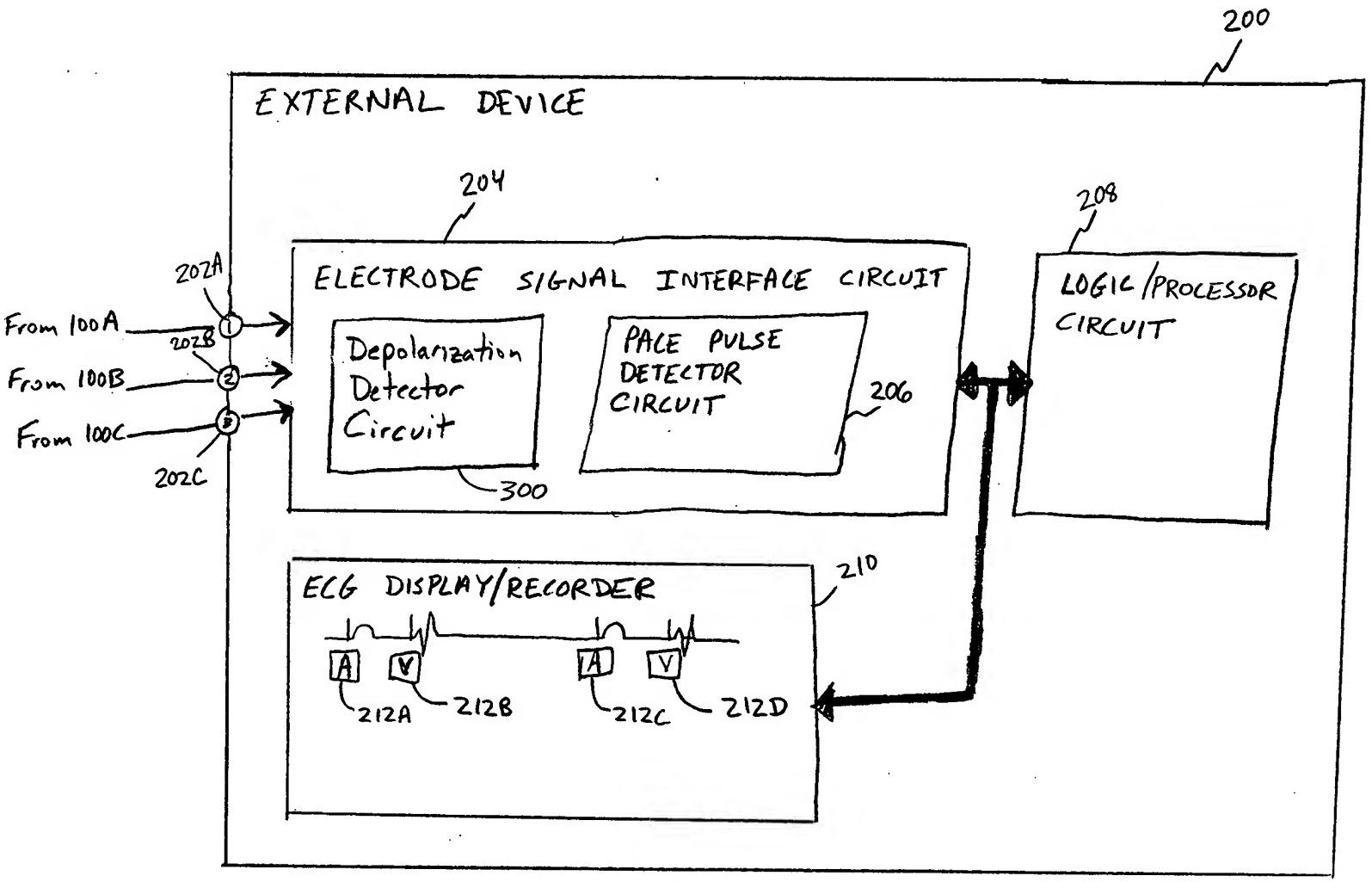
200
EXTERNAL DEVICE
204
ELECTRODE SIGNAL INTERFACE CIRCUIT
Depolarization Detector Circuit
300
PACE PULSE DETECTOR CIRCUIT
206
208
LOGIC/PROCESSOR CIRCUIT
202A
202B
202C
From 100A
From 100B
From 100C
1
2
3
ECG DISPLAY/RECORDER
210
A
V
A
V
212A
212B
212C
212D

FIG. 4

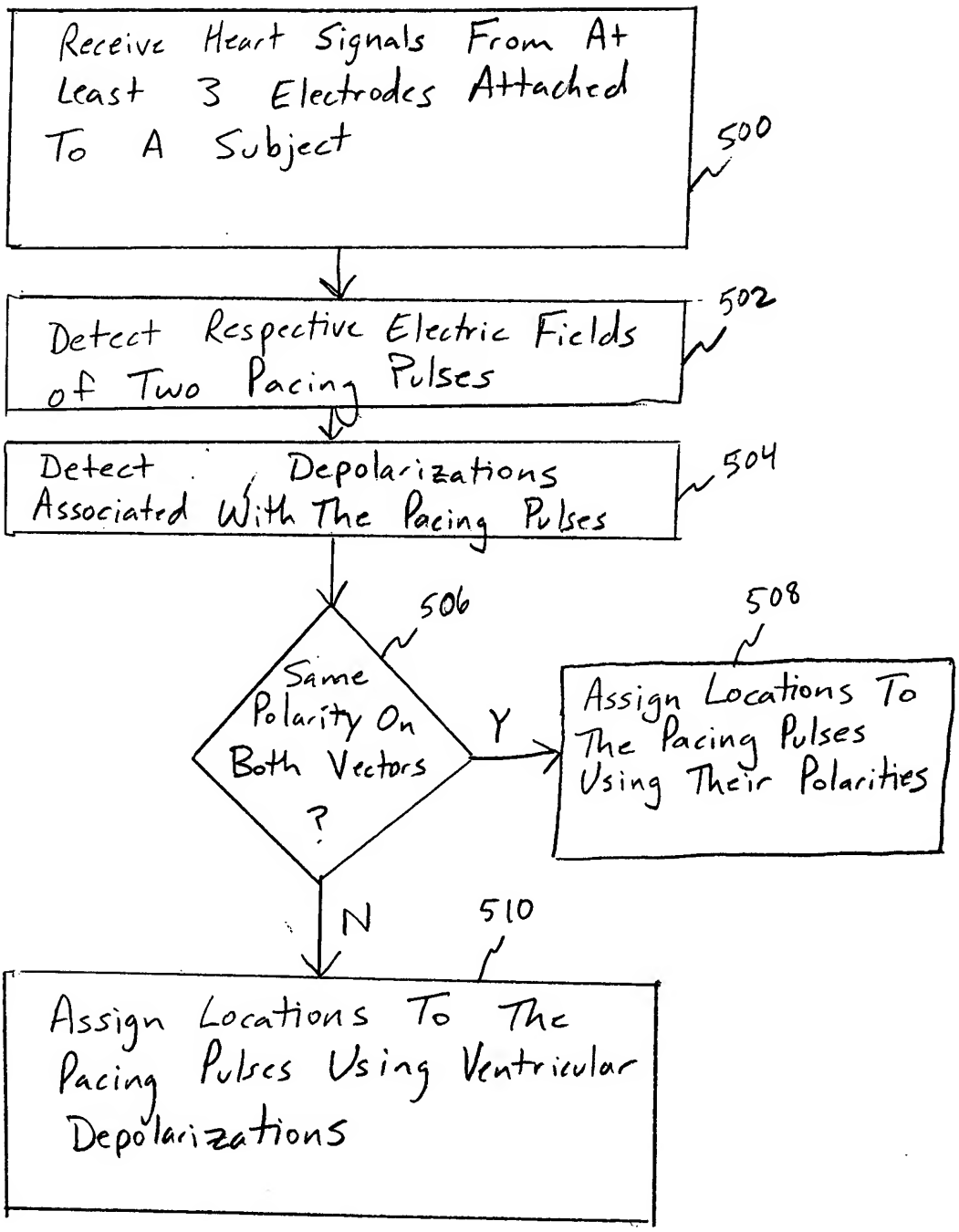
Receive Heart Signals From At Least 3 Electrodes Attached To A Subject
500
Detect Respective Electric Fields of Two Pacing Pulses
502
Detect Depolarizations Associated With The Pacing Pulses
504
Same Polarity On Both Vectors ?
506
Y
Assign Locations To The Pacing Pulses Using Their Polarities
508
N
510
Assign Locations To The Pacing Pulses Using Ventricular Depolarizations

FIG. 5

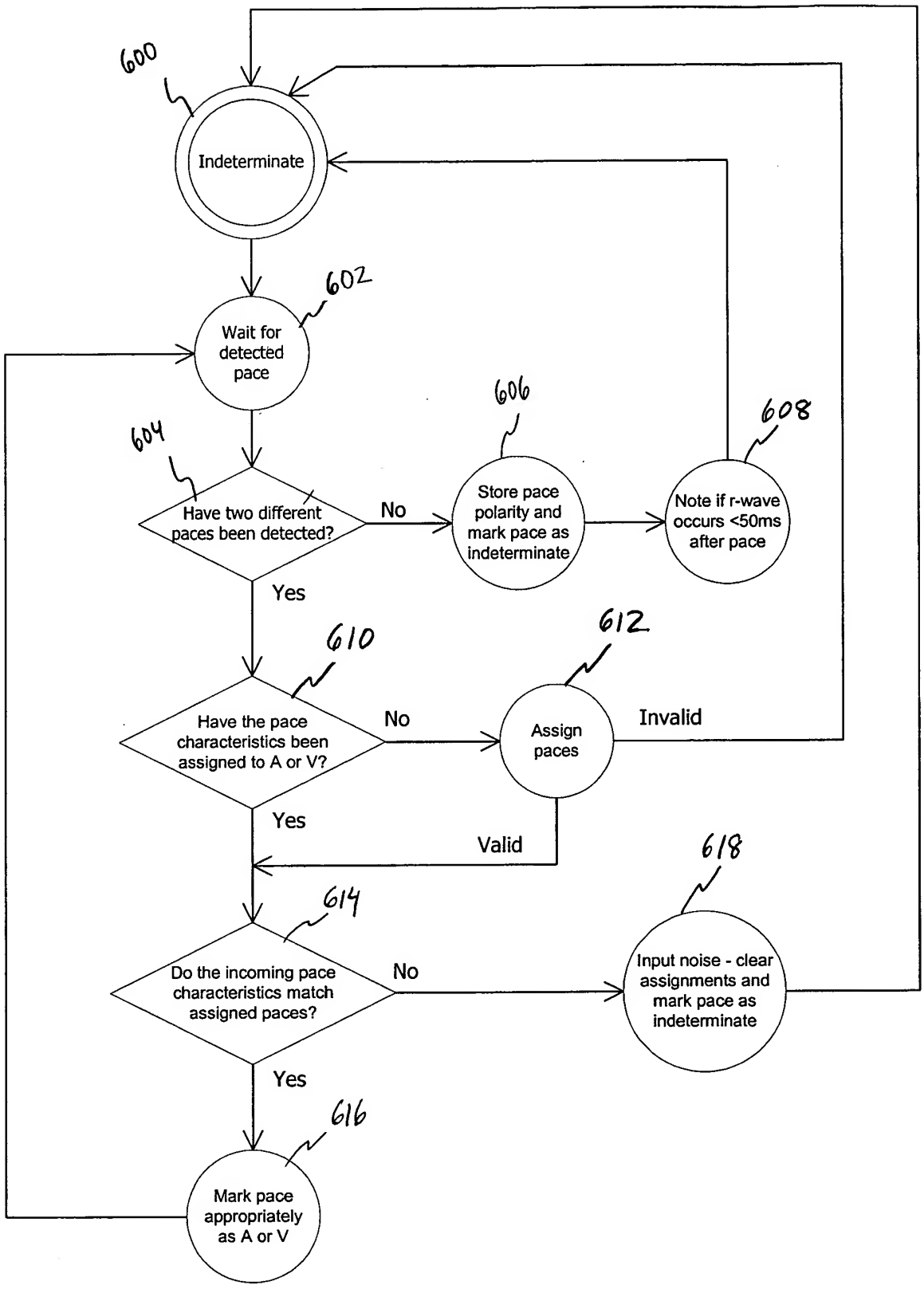
600
Indeterminate
602
Wait for detected pace
604
Have two different paces been detected?
No
606
Store pace polarity and mark pace as indeterminate
608
Note if r-wave occurs <50ms after pace
Yes
610
Have the pace characteristics been assigned to A or V?
No
612
Assign paces
Invalid
Yes
Valid
614
Do the incoming pace characteristics match assigned paces?
No
618
Input noise - clear assignments and mark pace as indeterminate
Yes
616
Mark pace appropriately as A or V

FIG. 6

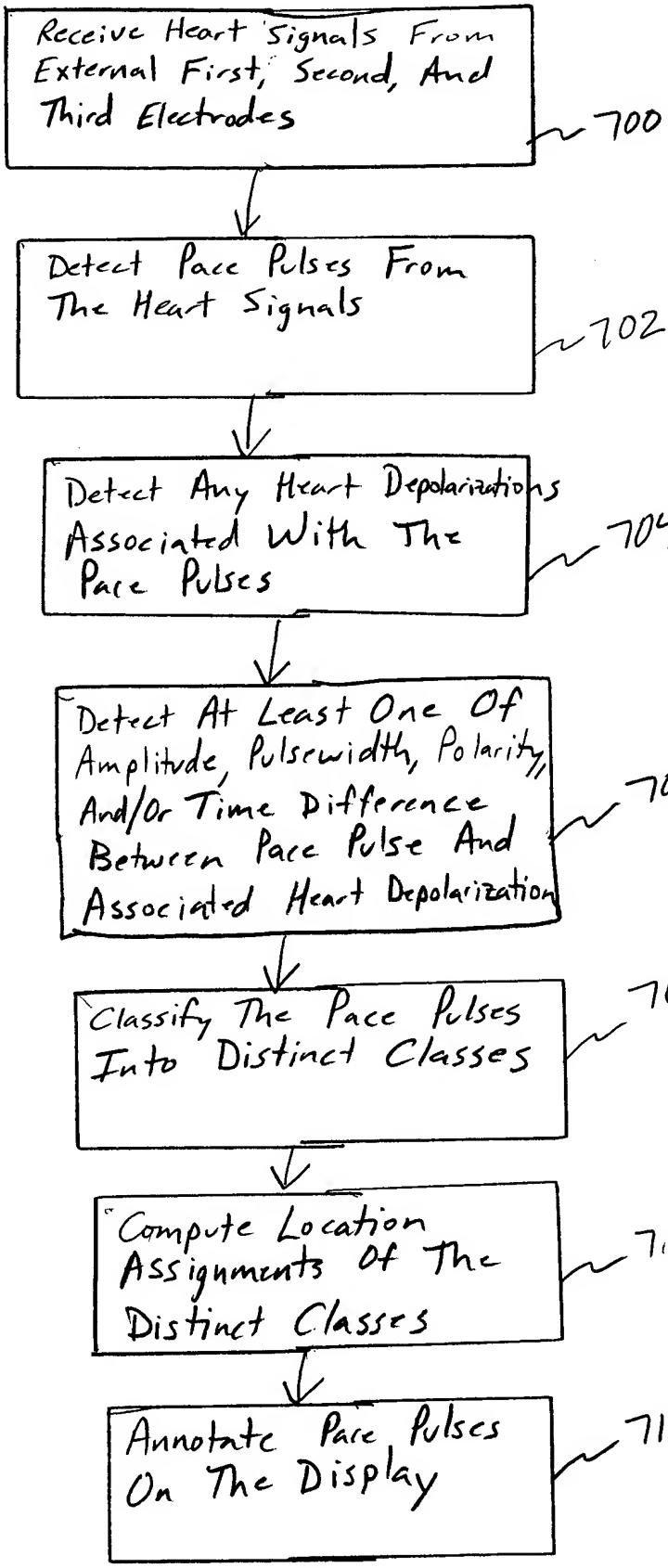
Receive Heart Signals From External First, Second, And Third Electrodes
700
Detect Pace Pulses From The Heart Signals
702
Detect Any Heart Depolarizations Associated With The Pace Pulses
704
Detect At Least One Of Amplitude, Pulsewidth, Polarity, And/Or Time Difference Between Pace Pulse And Associated Heart Depolarization
706
Classify The Pace Pulses Into Distinct Classes
708
Compute Location Assignments Of The Distinct Classes
710
Annotate Pace Pulses On The Display
712

FIG. 7

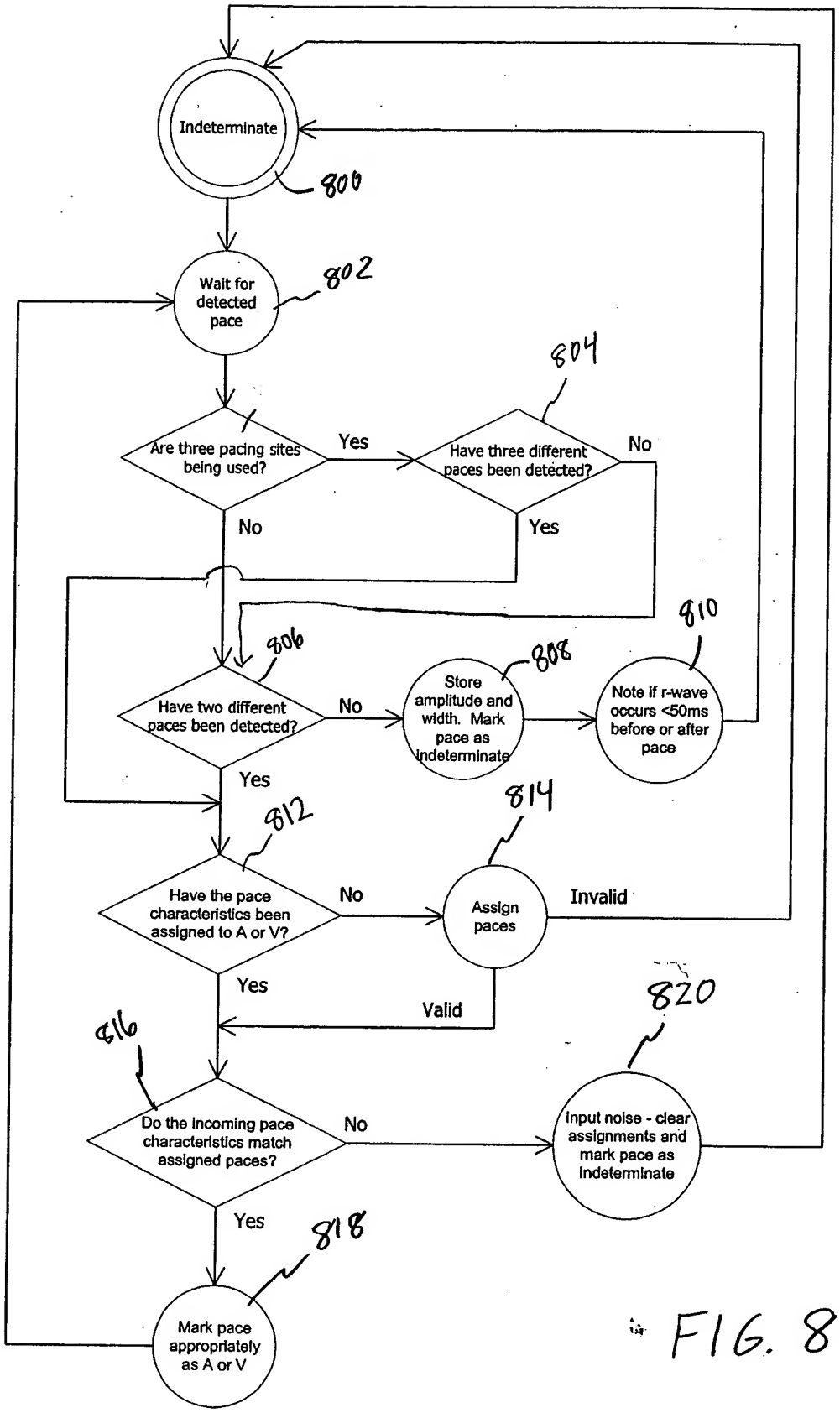
Indeterminate
800
Wait for detected pace
802
Are three pacing sites being used?
Yes
804
Have three different paces been detected?
No
Yes
No
806
Have two different paces been detected?
No
808
Store amplitude and width. Mark pace as indeterminate
810
Note if r-wave occurs <50ms before or after pace
Yes
812
Have the pace characteristics been assigned to A or V?
No
814
Assign paces
Invalid
Yes
Valid
816
Do the incoming pace characteristics match assigned paces?
No
820
Input noise - clear assignments and mark pace as indeterminate
Yes
818
Mark pace appropriately as A or V

FIG. 8